Whirligig Spinner

Make your own version of a whirligig spinner like ones that have been used for centuries!

Kit contains:

- 3 feet of yarn
- Cardstock with 3 circle templates

You will need: scissors, glue, coloring supplies, and a hole punch (or nail/sharp pencil).

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INSTRUCTIONS

(1) Cut out all the circles and glue them together in a stack (circle with dots on the outside).

(2) Decorate the outside circles (BONUS! If you want to create an optical illusion, divide the circle into 6 parts and color each part a rainbow color. Do this on at least one side).

(3) Poke holes through the two dots. Thread the yarn through both holes and tie the loose ends together.

(4) Hold the very ends of the yarn and twirl the circle around (it's close to the feeling of turning a jump rope) so that you get the yarn very twisty.

(5) As you stop twisting, pull your hands slightly apart. The circle/disk should spin! With some practice, you can get it to wind itself the other way, then unwind back again, keeping the motion going for a while.

WHAT'S GOING ON?

Your whirligig spins so fast because of something called **supercoiling**. When a string twists enough, it starts to form another coil on top of itself. A supercoiled string stores more energy, which helps spin the disk faster and faster.

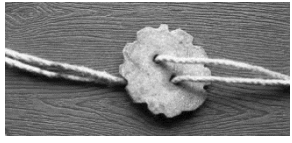
A good example of spinning technique is here:

https://bit.ly/3JblfJQ

BONUS OPTICAL ILLUSION:
When the disk spins very quickly, the colors blend into a near-recreation of white light. This "white" wheel is created because your eyes can't keep up with the rapid rate at which the colors are spinning!

https://www.stevespanglerscience.com/lab/experiments/ disappearing-color-wheel/

MORE ABOUT WHIRLIGIGS



These types of toys have been around for centuries and have been found on multiple continents. Kids in the past used string and buttons or clay to make similar toys.

https://www.mountclare.org/education/MakeYourOwnWhirligigToy_PlayLearn.pdf

Recently, a bioengineer named Manu Prakash created a whirligig toy that acts as a **centrifuge**, usually an expensive piece of medical lab equipment. His “Paperfuge” can work as well as a centrifuge to help diagnose diseases, and only costs a few cents!

https://www.wired.com/2017/01/paperfuge-20-cent-device-transform-health-care/